

# SNF Stabilization and Disposition (RL-0012) Solid Waste Stabilization and Disposition (RL-0013, Sludge Treatment) Nuclear Facility Deactivation and Decommissioning (RL-0041)

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*Mobile Solidification System (MOSS) fabrication*

## Overview

This section addresses work in Project Baseline Summaries (PBS) RL-0012, *Spent Nuclear Fuel (SNF) Stabilization and Disposition*, RL-0013, *Solid Waste Stabilization and Disposition*, and RL-0041, *Nuclear Facility Deactivation and Decommissioning*.

NOTE: Unless otherwise noted, all information contained herein is as of the end of December 2006.

## Notable Accomplishments

### Overall KBC Project (PBS RL-0012, PBS RL-0013, & PBS RL-0041)

#### SNF Stabilization and Disposition (PBS RL-0012)

- **K East Containerization:** Completed removal of 223 total debris units; completed readiness to demonstrate the Qualified Process; and completed the final pass vacuuming rate verification.
- **K West Retrieval:** Commenced vacuuming in the east bay, and removal of the Canister Cleaning Station; revised operating procedures to facilitate simultaneous vacuuming and Hose-in-Hose (HIH) transfer operations.
- **Hose-in-Hose (HIH) Transfer:** Transferred and estimated 2.0 cubic meters (m<sup>3</sup>) from SCS-CON-102 container, and installed in-line strainers and dilution line at container outlet, achieving increased run time.
- **Legacy Fuel:** Completed K Basin and Cold Vacuum Drying Facility (CVDF) Authorization Basis revisions for suspect fuel.

#### Solid Waste Stabilization and Disposition (PBS RL-0013)

- **Sludge Treatment Project (STP):** Completed 100 percent design, initiated FH review for acceptance, and issued Request for Proposal (RFP) for Corrosion System fabrication; received RL approval to award fabrication contract and received contract RFP responses for Assay System; fabrication 70 percent complete for the Mobile Solidification System (MOSS); received approval from RL to award Drum Handling Systems contracts, completed associated RFPs, and awarded Shield Window contract; received RL approval to award primary transfer pump contract and initiated British Nuclear Group America (BNGA) final review of 100 percent design submittal; awarded contract to provide and install new CVDF Bay 1 bridge crane; continued working to resolve RL comments on Volume 2, *Revision 0 of Preliminary Documented Safety Analysis (PDSA)* and submitted Volume 2, *Revision 0 of PDSA* to RL for review and approval on December 28, 2006; supported RL "what if" exercises related to resolution of FY 2008 funding issue and RL preparation for STP Critical Decision 2/3; held interim HIH lessons learned session on December 14, 2006; and completed negotiation and implemented Modification 9 to BNGA contract addressing updated definition of installation packages deliverables and fee agreement.

## Issues

### SNF Stabilization and Disposition (PBS RL-0012)

- **K East Final Pass is trending behind schedule. The baseline approach requires evaluation and revision to improve effectiveness, schedule, and confidence level for completion.**
  - Actions In Progress:
    - o Revising container transfer and final pass vacuuming sequence to mitigate delays in HIIH transfers.
    - o Continuing removal of debris and other large items to improve efficiency of final vacuuming progress.
    - o Developing technical justification to reduce the activities required to achieve sludge removal end-point, taking advantage of sampling information/other basin measurements that show a lower residual radiation content.
    - o Planning to eliminate use of cartridge filters and the post-transfer vacuuming effort.
- **HIIH Transfer Operations have been slowed by realized risks associated with equipment operations. Activity is behind schedule and impacting K East and K West activities.**
  - Actions In Progress:
    - o Installed in-line strainer and dilution devices minimize line clogging/system pressure differential shut-down; increased control system parameters that allow more reaction time to differential pressure transients prior to system trip.
    - o Made modification to shaft seal mechanism pressurization procedure and planning installation of seal recharge line at pump stations to minimize loss of pressure recovery time/pre-start checks.
    - o Obtained on-site services of Fluor Corporate resource to assist in troubleshooting/repairing cause of vibration in pump station No. 2.
    - o Developed work package to place backup pump in service for booster station No. 2.
    - o Continue on-shift evaluation of system operating parameters and incorporation of procedure adjustments to operating protocol.
    - o Maintaining continuous engineering presence during operations for performance monitoring and immediate response to issues/events.
    - o Extending operations by judicious use of overtime to lengthen transfer times once system is in operation.
    - o Revised working schedule to incorporate transfer duration and coordinate with K East and K West activities.
    - o Maintaining spares inventory to facilitate continued quick repair cycle.
- **Revisions to the K East, K West, and HIIH activities in response to emerging risks/mitigation actions will increase the utilization of Project Management Reserve (PMR) and unfavorable cost variance.** (Specific discussion of Sludge Treatment risks/cost increases included later in this section.)
  - Actions In Progress:
    - o Opportunities for cost reductions and efficiencies have been identified to remain within funding.
    - o Decisions due from RL regarding scope deferral or additional funds (several direct discussions/meetings).
    - o Several Baseline Change Requests (BCRs) approved for the use of PMR.

## Issues, continued

### Solid Waste Stabilization and Disposition (PBS RL-0013)

- **Negative impact of RL withdrawal of procurement authority**
  - Actions In Progress:
    - o Early award of key component fabrication contracts:
      - o MOSS fabrication ~ 75 percent complete
      - o Drum Handling Shield Window awarded December 28, 2006 – award of balance of Drum Handling Systems equipment contracts are pending
      - o Evaluation of Assay System and primary transfer pump proposals prior to award
    - o Two-step PDSA
      - o Volume 2 – Corrosion, Assay, and MOSS Systems
      - o Volume 1 – Drum Handling and Retrieval and Transfer (R&T) Systems
- **Delay in Contractor Stabilization and Packaging System (CSAPS) design completion driven by changes in Hazards Analysis/Control Decisions and their impacts on initiation of long lead procurements.**
  - Actions In Progress:
    - o Preparation of BCR documenting delay in completion of CSAPS design and ~\$1.5M FY 2007 cost impact. FY 2008 and beyond cost impact to be determined.
- **Impacts from need to revise BNGA Control System design concept to comply with DOE CRD 420.1A requirements for Safety Class/Safety Significant control systems redundancy, independence, and separation.**
  - Actions In Progress:
    - o BNGA design of hardwired Safety Class/Safety Significant control systems in parallel to Safety Class Programmable Logic Controller. Completion forecast for April 2007.
    - o Revised BNGA fee agreement provides incentive for timely completion
- **Up to one year delay in initiation of sludge treatment (March 2009 to March 2010) as a result of RL withdrawal of \$1.78M in FY 2007 funds from PBS RL-0013; T Plant support of readiness to receive drums.**
  - Actions In Progress:
    - o Impact formally documented to RL on December 5, 2006, met with RL on January 11, 2007 to discuss options
    - o RL committed to authorize FH to expend \$0.25M as stop gap measure until RL ability to fund balance of \$1.2M FY 2007 requirement is resolved

## FY 2007 Funds vs. Spend Forecast (\$M)

	Projected FY 2007 Funding	FY 2007 Fiscal Year Spend Forecast	Variance
RL-0012 SNF Stabilization & Disposition	\$ 79.9	\$ 79.7	\$ 0.2
RL-0013 Solid Waste Stabilization & Disposition	\$ 33.9	\$ 31.2	\$ 2.7
RL-0041 Nuclear Facility D&D, River Corridor Closure	\$ 12.9	\$ 12.3	\$ 0.5
<b>TOTAL</b>	<b>\$ 126.7</b>	<b>\$ 123.2</b>	<b>\$ 3.4</b>

## FY 2007 Schedule/Cost Performance (\$M)

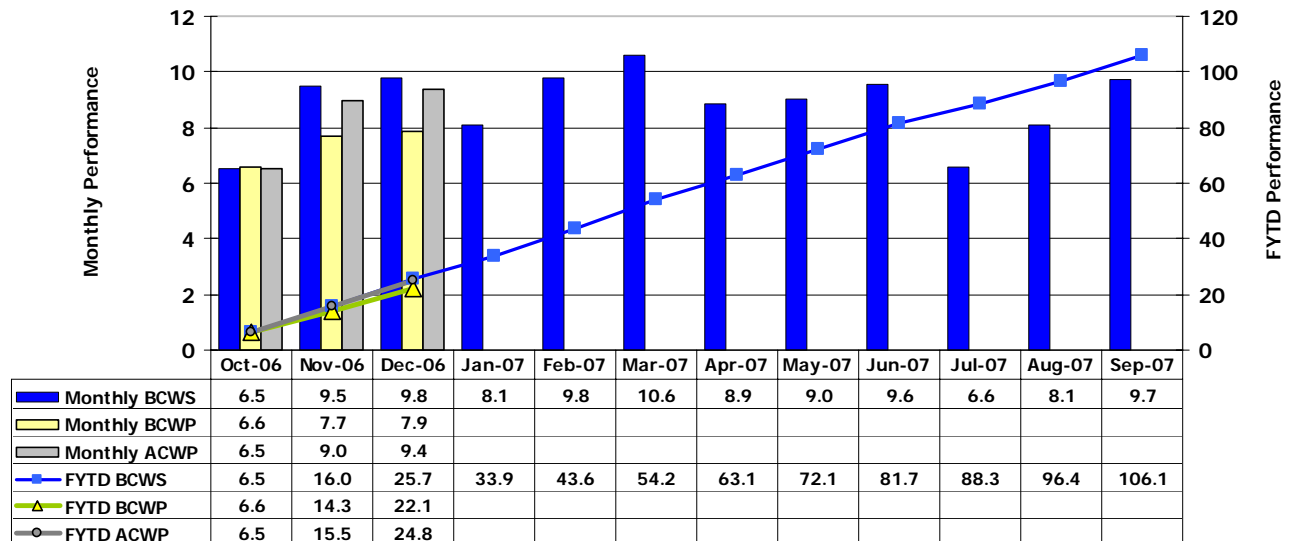
		Budgeted Cost of Work Scheduled	Budgeted Cost of Work Performed	Actual Cost of Work Performed	Schedule Variance \$	Schedule Variance %	Cost Variance \$	Cost Variance %	Budget At Completion
RL-0012	SNF Stabilization & Disposition	\$16.5	\$14.8	\$18.2	-\$1.6	-9.8%	-\$3.3	-22.5%	\$66.0
RL-0013	Solid Waste Stabilization & Disp. - Treatment	\$7.2	\$5.9	\$6.2	-\$1.3	-17.7%	-\$0.3	-5.3%	\$28.4
RL-0041	Nuclear Facility D&D	\$2.1	\$1.4	\$0.4	-\$0.7	-34.2%	\$0.9	67.9%	\$11.7
<b>Total</b>		<b>\$25.7</b>	<b>\$22.1</b>	<b>\$24.8</b>	<b>-\$3.6</b>	<b>-14.0%</b>	<b>-\$2.7</b>	<b>-12.2%</b>	<b>\$106.1</b>

Numbers are rounded to the nearest \$0.1M and include the closure services allocation.

- **Schedule Performance (-\$3.6M/-14.0%):** Delays occurred in the following activities: Sludge Treatment design review and construction mobilization activities due to impact of change to Design Basis Analysis (DBA) approach and K East/K West sludge containerization due decision to perform additional debris removal activities.
- **Cost Performance (-\$2.7M/-12.2%):** The unfavorable CP is primarily due to overruns in K East and K West Basins as a result of additional debris removal activities; HHH maintenance/engineering due to difficulties encountered in pumping; and STP BNGA design and engineering due to DBA impact.

## FY 2007 Schedule/Cost Performance (\$M), continued

### Performance Analysis FYTD and Monthly (\$M)



## Milestone Achievement

Number	Milestone Title	Type (TPA/PI/DNFSB)	Due Date *	Actual Date	Forecast Date	Status / Comments
M-034-33B (S10-05-018)	Complete K East Sludge Containerization	TPA	03/01/05	10/20/06		Complete
DNFSB 119E (S10-05-014)	Complete K East Bulk Sludge Consolidation	DNFSB	10/31/06	10/20/06		Complete 11 days ahead of schedule
M-034-34 (S10-05-010)	Complete Removal of K East Sludge	TPA	05/31/07		05/31/07	On schedule
DNFSB 120E (S10-05-015)	Complete K East Basin Containerized Sludge Removal	DNFSB	05/31/07		04/09/07	Ahead of schedule
DNFSB 122E	K East Final Pass Sludge Removed	DNFSB	05/31/07		05/31/07	On schedule
M-034-35a (S10-05-011)	Containerize K West Bulk Sludge	TPA	07/31/07		06/25/07	Ahead of schedule
DNFSB 119W (S10-05-016)	Complete K West Bulk Sludge Containerization	DNFSB	07/31/07		06/25/07	Ahead of schedule
M-034-35b (S10-05-011)	Complete K West Final Pass	TPA	01/31/08		01/31/08	On schedule

\* DNFSB dates reflect Implementation Plan update, TPA dates reflect change package M-34-05-04, forecast dates are current working level schedules.